ABSTRACT

A lithographic method of forming submicron polysilicon features on a semiconductor substrate, including the steps of coating said substrate with an anti-reflective coating (ARC) comprising two layers having matched indices of refraction (n) and extinction coefficient (k) selected to reduce reflection to less than 1% with 193nm wavelength exposure. The ARC is subsequently patterned to serve as an etch hardmask. Preferably the ARC mask consists of a first layer of between 300 and 1500 angstroms of silicon rich silicon nitride having an extinction coefficient of from 0.77 to 1.07, and a second layer of between 170 and 320 angstroms of silicon oxynitride having an extinction coefficient of about 0.32.